Instructions for Preparing Short, Two-Page Papers

The short paper can be no longer than 2 pages and should be written in Microsoft Word. The document should be set up accordingly:
Page size: U.S. Letter (8.5 x 11 inches or 216 x 279 mm)
Margins: 1 inch or 25.4 mm on all sides
Font: Times New Roman, 12 point.

First line – Title. The title should be in bold font, capitalizing only the first word of the title:
The challenges of making silage in Antarctica

Second line – Authors. Regular font in the following style:
A.B. Cedar[1], D.E. Fern[2] and G.H. Ink[1]

Third line – Affiliations, locations, corresponding author's email address. Italic font:
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The body of the paper should contain the following sections: Introduction, Materials and Methods, Results and Discussion, Conclusions, and References (optional). Bold the heading and begin the text for the section on the same line using regular font, single spacing. Double space between sections. For example:

Introduction Inoculants are the most common additives used in making silage. While inoculant effects on fermentation and dry matter (DM) recovery are understood, animal performance effects are often greater than expected. In vitro analyses may help uncover how inoculants affect rumen fermentation and ultimately dairy cattle performance. Our objective was to study how inoculation of lucerne silage affected in vitro gas production.

Materials and Methods Lucerne was ensiled in two trials ….

Results and Discussion Inoculation of lucerne before ensiling in trial 1 ….

Figures and tables may be placed within the two-page paper. Figure captions should be placed under the figure, bolding the figure number:
Figure 1 The relationship between butyric acid concentration and dry matter content of ensiled lucerne (trial 1).

Tables should follow Journal of Dairy Science format. Table captions should be placed prior to the table, bolding the table number:
Table 1 Average silage characteristics in trial 1.

References should be placed in Journal of Dairy Science format.

An example two-page paper follows.

Please send your papers via email to Glen Broderick (gbroderi@wisc.edu) by June 1, 2009 at the latest to ensure inclusion in the proceedings. Glen will also handle any questions you may have about the papers.

Effects of varying dietary ratios of lucerne to maize silage on production and microbial protein synthesis in lactating dairy cows

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Introduction Lucerne silage (LS) is high in total crude protein (CP) and rumen-degraded protein (RDP) but low in fermentable energy while maize silage (MS) is a good source of fermentable energy but low in RDP. Thus, these silages are complementary and feeding them at optimum ratio should increase nutrient efficiency in lactating cows. Dhiman and Satter (1997) observed greater milk yield when the dietary forage was 2/3 LS and 1/3 MS. The objective of this experiment was to optimise the dietary LS:MS ratio for production, microbial protein and N utilisation.

Materials and Methods Twenty-eight (8 with rumen cannulae) multiparous Holstein cows were blocked by days-in-milk and assigned to replicated 4 x 4 Latin squares (28 d periods). The 4 diets were: A [51% LS, 43% high-moisture shelled maize (HMSM), and 3% solvent soyabean meal (SSBM)], B (37% LS, 13% MS, 39% HMSM, and 7% SSBM), C (24% LS, 27% MS, 35% HMSM, and 12% SSBM), and D (10% LS, 40% MS, 31% HMSM, and 16% SSBM). Dietary CP was 17.2, 16.9, 16.6, and 16.3%, respectively. Intake and yield of milk and milk components were determined during the last 14-d of each period. Rumen digestion and metabolism, including microbial protein yields, were quantified using omasal sampling (Ahvenjari et al., 2000).

Results and Discussion Dry matter intake, yield of milk and fat, and milk fat content decreased linearly when MS replaced LS (Table 1). Depressed fat yield may have been related to lower rumen acetate and depressed rumen pH (Figure 1). There was a quadratic effect of LS:MS on protein yield with maximum at 31% dietary LS. Nitrogen efficiency increased because N excreted in urine and feces decreased linearly when MS replaced LS. Production was significantly depressed on LS:MS of 10:40 and microbial non-amino N flow was lowest on that diet. A quadratic effect also was observed on microbial protein synthesis with a maximum at 38% LS, suggesting that maximal microbial protein formation required a balance between the supply of fermentable energy and RDP.

Conclusions The results of this study diets indicate that maximal milk protein yield and microbial protein supply occurred at dietary LS:MS ratios of 31:19 to 38:12.

References

Ahvenjarvi, S., A. Vanhatalo, P. Huhtanen, and T. Varvikko. 2000. Determination of reticulo-rumen and whole-stomach digestion in lactating cows by omasal canal or duodenal sampling. Br. J. Nutr. 83:67-77.

Dhiman, T. R., and L. D. Satter. 1997. Yield response of dairy cows fed different proportions of alfalfa silage and corn silage. J. Dairy Sci. 80:2069-2082.

Table 1 Effects of dietary ratios of lucerne silage to maize silage (LS:MS) on production and rumen metabolism.

	LS:MS					
Item	51:0	37:13	24:27	10:40	SED	LS:MS
DM intake, kg/d	26.8[a]	26.5[a]	25.4[b]	23.7[c]	0.44	R, L[1]
Milk yield, kg/d	41.5[a]	42.0[a]	41.5[a]	39.5[b]	0.86	R, L, Q
Milk fat, kg/d	1.56[a]	1.51[ab]	1.40[bc]	1.33[c]	0.06	R, L
Milk protein, kg/d	1.26	1.32	1.30	1.25	0.03	R, Q
Milk urea, mg N/dl	13.8	13.9	14.1	14.4	0.47	NS
Urinary N, g/d	217[a]	215[a]	201[b]	188[b]	7.05	R, L
Fecal N, g/d	275[a]	263[a]	230[b]	211[b]	10.2	R, L
Rumen ammonia N, mg/dl	10.5[a]	10.0[ab]	8.72[b]	6.19[c]	0.92	R, L
Rumen acetate, mM	88.6[a]	84.8[ab]	79.6[bc]	74.0[c]	3.46	R, L
Omasal flows						
RDP supply, g/d	3068[ab]	3142[a]	2809[b]	2469[c]	158	R, L
RDP supply, % of DMI	11.7[a]	11.4[a]	10.5[b]	10.1[b]	0.33	R, L
Total microbial NAN, g/d	465[a]	479[a]	460[a]	423[b]	12	R, L

[a,b,c,d]Means in the same row with different superscripts differ ($P \leq 0.05$).

[1]R, L, & Q = significant ($P < 0.05$) ratio, linear & quadratic effects; NS = non-significant; SED = standard error of the difference of least square means.

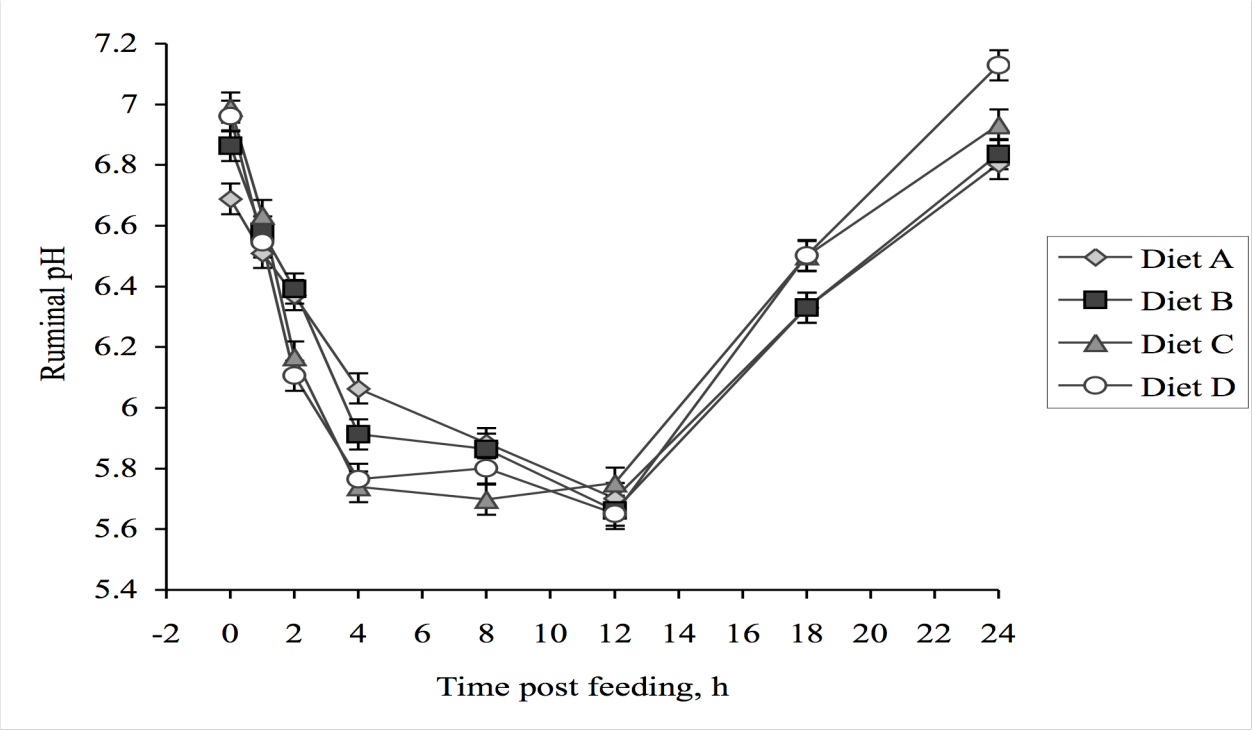

Figure 1 Effects of varying dietary ratios of lucerne silage to maize silage (LS:MS) on ruminal pH (means ± SED) after feeding. Diet A (51:0 LS:MS), Diet B (37:13 LS:MS), Diet C (24:27 LS:MS), and Diet D (10:40 LS:MS).